incubating a control cell under the same conditions and for the same time absent the compound; and

comparing the level of JNK3 activity in the presence and absence of the compound, wherein a difference in the level of JNK3 activity indicates that the compound is a candidate compound for the treatment of a disorder related to excitotoxicity.

50. A method of identifying a candidate compound for the treatment of a disorder related to excitotoxicity, the method comprising:

incubating a JNK3 protein with a JNK3 substrate and a compound under conditions sufficient to allow the interaction of the JNK3 protein with the JNK3 substrate;

incubating the JNK3 protein and the JNK3 substrate under the same conditions and for the same time absent the compound; and

comparing the level of JNK3 activity in the presence and absence of the compound, wherein a difference in the level of JNK3 activity indicates that the compound is a candidate compound for the treatment of a disorder related to excitotoxicity.

51. A method of identifying a candidate compound for the treatment of a neuronal disorder, the method comprising:

incubating a JNK3 protein with a JNK3 substrate and a compound under conditions sufficient to allow the interaction of the JNK3 protein with the JNK3 substrate;

incubating the JNK3 protein and the JNK3 substrate under the same conditions and for the same time absent the compound; and

comparing the level of JNK3 activity in the presence and absence of the compound, wherein a difference in the level of JNK3 activity indicates that the compound is a candidate compound for the treatment of a neuronal disorder.

52. A method of identifying a candidate compound for the treatment of a neuronal disorder, the method comprising:

incubating a cell that can express a JNK3 protein with a compound under conditions sufficient to express the JNK3 protein;

incubating a control cell under the same conditions and for the same time absent the compound; and

comparing the level of JNK3 activity in the presence and absence of the compound, wherein a difference in the level of JNK3 activity indicates that the compound is a candidate compound for the treatment of a neuronal disorder.

53. The method of claim 49, 50, 51, or 52, wherein the compound is a peptide, a peptidomimetic, a small organic molecule, or a small inorganic molecule.

54. The method of claim 49, 50, 51, or 52, wherein the compound inhibits the ability of JNK3 to phosphorylate a substrate.

55. The method of claim 54, wherein the substrate is c-Jun.

56. The method of claim 49, 50, 51, or 52, wherein the compound inhibits the ability of JNK3 to bind a substrate.

57. The method of claim 56, wherein the substrate is c-Jun.

58. The method of claim 49 or 50, wherein the excitotoxic disorder is kainic acid-induced or pentetrazole-induced.

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59. The method of claim 49, 50, 51, or 52, wherein the disorder is a seizure disorder, epilepsy, cerebrovascular disorder, ischemia, spinal cord injury, spinal cord pressure, dementia, Alzheimer's disease, Parkinson's disease, a neurodegenerative disorder, Huntington disease, or motoneuron disease.--